

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

SynQor, Inc.

Plaintiff,

v.

Cisco Systems, Inc. and
Vicor Corporation.

Defendants.

Civil Action No. 2:11-cv-54-MHS-CMC

JURY TRIAL DEMANDED

SYNQOR'S P.R. 4-5(C) REPLY CLAIM CONSTRUCTION BRIEF

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In their responsive claim construction brief, Defendants completely change their construction of two of the claim terms at issue – "substantially uninterrupted flow of power" and the controlled rectifier-related terms. These new constructions, however, fare no better than their old ones. For the other claim terms at issue, Defendants continue to urge constructions that are contrary to both the ordinary meaning and the specification (and the constructions adopted by the Court in the '497 case), and improperly attempt to read in limitations from the specification that are not in the claims. Defendants' constructions should be rejected, and SynQor's adopted.

I. The Controlled Rectifier–Related Terms

"Each controlled rectifier being turned on and off in synchronization with the voltage waveform across a primary winding to provide an output, each primary winding having a voltage waveform with a fixed duty cycle"	
SynQor's Proposed Construction	Defendants' New Proposed Construction
<p>"Each controlled rectifier being turned on and off in synchronization with the voltage waveform across a primary winding" means "each controlled rectifier being turned from on to off or from off to on <i>at the same time as</i> a change of the voltage waveform across a primary winding." See construction for "controlled rectifier."</p> <p>"Each primary winding having a voltage waveform with a fixed duty cycle" means "each primary winding having a voltage waveform with a duty cycle <i>that does not substantially vary</i>."</p>	<p>"Each controlled rectifier being turned on and off in synchronization with the voltage waveform across a primary winding to provide an output, each primary winding having a voltage waveform with a fixed duty cycle" means "each controlled rectifier being driven <u>switching</u> from on to off and from off to on by <u>during respective periods of change</u> <u>in</u> the voltage waveform across a primary winding to provide an output, each primary winding having a voltage waveform with a duty cycle that <i>remains unchanged regardless of input voltage or load</i>."</p>

In their brief, Defendants change their construction of "in synchronization with," but urge their original construction for "fixed duty cycle." Dkt. 280 at 16 & 18. Each is discussed separately below.

A. Defining "In Synchronization With" to Mean "During" Alters the Ordinary Meaning of the Term and Would Cause Unnecessary Confusion.

In their joint claim construction statement, Defendants construed the "in synchronization with" language to require that the controlled rectifiers be "driven" on and off "by" the voltage waveform across a primary winding. Dkt. 267 at 23-44. Apparently realizing that this

construction is contrary to the plain meaning of the claims and not required by the specification, Defendants have changed their construction to require that the controlled rectifiers be turned on and off "during respective periods of change in" the voltage waveform across a primary winding. Dkt. 280 at 16.

Defendants' new construction, however, also departs from the ordinary meaning of the claim language while injecting unnecessary potential confusion. As the Court found in the '497 case, the ordinary meaning of "synchronization" means that two things happen "at the same time." '497 case, Dkt. 474 at 29-30. Defendants do not dispute this. This is not necessarily the same as saying that one thing occurs "during" the other. For example, the first definition of "during" in the dictionary is "throughout the continuance or course of." Ex. 10, Webster's at 703. As Defendants acknowledge, switching a controlled rectifier does not generally occur "throughout the course of" the change in primary winding voltage, because the controlled rectifier switching can take much less time. Defendants' proposed construction therefore fails to track the ordinary meaning of the term "synchronization" and would likely confuse a jury.

To be sure, "during" can also mean "at some point in the course of." Ex. 10, Webster's at 703. This is the meaning Dr. Leeb used at his deposition. Because of its multiple meanings and potential vagueness, however, using the term "during" in the claim construction is likely to cause confusion. And it is unnecessary, as the Court's construction in the '497 case reflects the ordinary meaning of the term and is easy for a jury to understand.

B. A "Fixed" Duty Cycle Is One That Does Not Substantially Vary, But the Duty Cycle Need Not Remain Completely Unchanged.

Defendants' proposed construction requires that a "fixed" duty cycle be "unchanged" regardless of input or load, even though both sides have explained that this definition does not reflect the ordinary meaning of "fixed duty cycle" to persons of ordinary skill in the art and would exclude real world converters. Dkt. 277 at 13-14. Defendants' construction would also read out the preferred embodiments (which are real-world converters), a result that is "rarely, if

ever, correct." *See Adams Respiratory Therapeutics, Inc. v. Perrigo Co.*, 616 F.3d 1283, 1290 (Fed. Cir. 2010); Dkt. 277 at 13.

Defendants admit that a "real-world converter" will "of course" have some variation in duty cycle, but contend that excluding such real world converters would be a "misread[ing]" of their construction. Dkt. 280 at 23, 24 n.17. This, however, is an interpretation that a jury could well adopt, especially if Defendants encourage the jury to do so at trial to try to avoid infringement. Making clear that insubstantial duty cycle variations are not excluded from the scope of the claims, as SynQor proposes, would eliminate this possibility.

As a fallback, Defendants propose construing "fixed duty cycle" as "a duty cycle that changes only negligibly in response to changes of input voltage or load." Dkt. 280 at 24 n. 17. But Defendants make no showing that such variations in real-world converters, including in the preferred embodiments, are only "negligible." Neither of the parties' experts offered such an opinion, and Defendants cite no intrinsic or extrinsic support. Moreover, as Defendants' expert admitted, small duty cycle variations can be caused by factors other than changes of input voltage and load. Dkt. 277, Ex. 4, Horenstein Dep. at 28:11-29:11. SynQor's construction, which reflects the ordinary meaning of the term, and would cover real-world converters and the preferred embodiments, should be adopted.¹

II. "Short" Transition Times

"Transition times which are short" (relative to the on-state and off-state times of the controlled rectifiers)	
SynQor's Proposed Construction	Defendants' Proposed Construction
"Transition times" means "time periods during which <i>a change of a voltage waveform occurs</i> across a primary winding."	"Transition times" means "time periods during which a voltage waveform across a primary winding <i>undergoes an oscillation</i> ."
"Transition times which are short relative to the	"The sum of all transition times totals less

¹ Defendants say that Dr. Leeb "correctly" stated that "a fixed duty cycle means that the duty cycle of the power switches is not varied to control the output voltage towards a set point / predefined value." Dkt. 280 at 20-21. SynQor agrees, and would accept a construction of "fixed duty cycle" as meaning that "the duty cycle of the power switches is not varied to control the output voltage towards a predefined value."

on-state and off-state times of the controlled rectifiers" means "transition times which are less than 20% of the overall on-state and off-state times of the controlled rectifiers." <i>See</i> construction of "controlled rectifier."	than 20% of the total switching cycle. <i>Full resonant, quasi-resonant and multi-resonant converters do not have short transitions.</i>
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A. Defendants' Construction of "Transitions" as "Oscillations" Is Contrary to the Ordinary Meaning and There Is No Basis to Read It In From the Specification.

The ordinary meaning of "transition" is "change," as the Court found in the '497 case and SynQor proposes here. '497 case, Dkt. 474 at 32. Defendants do not dispute this. "Oscillation," by contrast, refers to swinging back and forth, like a pendulum. Ex. 11, Webster's at 1595. Not all transitions are oscillations. For example, the term "oscillation" would not typically refer to a linear change in a waveform from a positive plateau to a negative one, even though such a change would fall within the ordinary meaning of a "transition." Consequently, "oscillation" does not reflect the ordinary meaning of "transition."²

Defendants point to the specification, but nothing in the specification requires the "transitions" in the primary winding voltage to be oscillations. Indeed, the portion that Defendants cite describes the switching of the *controlled rectifiers*, not the voltage in the primary winding, which is what undergoes the "transitions" in the claims. '190 patent, Col. 8:8-14. Moreover, this portion of the specification only describes the specific implementation of a preferred embodiment. The specification does not describe this implementation as "the invention," and does not compel reading it into the claim. The Court's construction in the '497 case – which SynQor proposes here – is correct and should be adopted.

B. Defendants' Added Limitation Excluding All "Full Resonant, Quasi-Resonant and Multi-Resonant Converters" Was Rejected by the PTO and in the '497 Case, and Should Be Rejected Here.

Defendants do not dispute that their proposed limitation excluding all "full resonant, quasi-resonant and multi-resonant converters" is not part of the ordinary meaning of the claim

² Defendants argue that SynQor "erroneously equates fluctuations with oscillations," Dkt. 280 at 10, but one of the definitions of "oscillation" is "a periodic variation or *fluctuation* between conditions." Ex. 11, Webster's at 1595 (emphasis added).

language, and was specifically rejected by the Court in the '497 case. Instead, Defendants contend that SynQor disavowed all such converters during the *inter partes* reexaminations of the patents-in-suit. But this is incorrect.

Indeed, the PTO in the reexaminations adopted the construction of "transition times which are short" from the '497 case, and declined to add an exclusion for "full resonant, quasi-resonant and multi-resonant converters," as Defendants seek here. The PTO's construction (and that in the '497 case) was adopted by the PTAB on appeal. As the Federal Circuit has explained, the prosecution history can be relevant to the extent it "provides evidence of how the PTO and the inventor understood the patent." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc). And here, the evidence shows that the PTO (both the examiner and the PTAB) recognized that the patent does not exclude all "full resonant, quasi-resonant and multi-resonant converters," and, in fact, expressly refused to add such a limitation in its claim construction.³

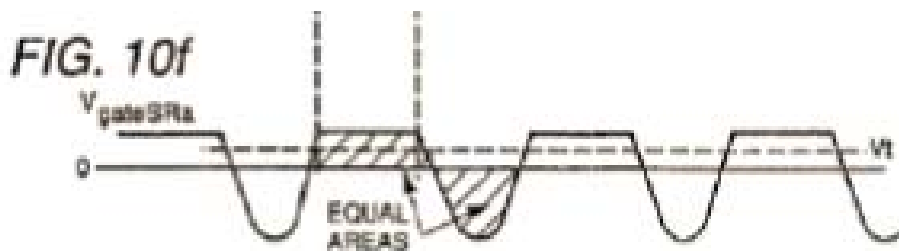
Moreover, the citations upon which Defendants rely hardly qualify as a "clear and unmistakable" surrender of *all* possible types of resonant converters. See *Ecolab, Inc. v. FMC Corp.*, 569 F.3d 1335, 1342 (Fed. Cir. 2009) (party alleging disclaimer must show that the "allegedly disclaiming statements constitute 'a clear and unmistakable surrender of subject matter'"). Arguing otherwise, Defendants first selectively quote from SynQor's July 13, 2010 response, while omitting the claim construction discussion in this document. There, SynQor specifically stated that the specification "excludes waveforms used by *certain* 'resonant converters,' 'where the oscillations last for a large portion, if not all, of the on-state and/or off state time' (e.g. JP '446, Steigerwald '090 and Steigerwald '539)." Dkt. 280, Ex. 5 at 4 (emphasis added). SynQor only excluded "certain" resonant converters (like JP '446 and Steigerwald)

³ Defendants incorrectly assert that the PTAB did not need to determine whether the claims included "limitations excluding resonant converters." Dkt. 280 at 9. But if all resonant converters were excluded, the PTAB could have distinguished Steigerwald as resonant without considering the transitions' length. Instead, the PTAB considered the length of the transitions. Dkt. 277, Ex. 6 at 15, 26, 31-32.

having a primary winding voltage waveform in which "the oscillations last for a large portion, if not all, of the on-state and/or off state time." SynQor did not distinguish *all* resonant converters. As Defendants do not dispute, the references SynQor was distinguishing – Steigerwald and JP '446 – did not disclose transition times in the primary winding voltage waveform of less than 20% of the switching cycle, which is required for transitions to be "short" under both side's constructions.

Additionally, the statement cited by Defendants was made on July 13, 2010, *before* the Court handed down its claim construction in the '497 case. After the '497 construction was handed down, the PTO adopted it (as did the PTAB later), neglecting to include a blanket exclusion of all resonant converters. *See* Ex. 12, Action Closing Prosecution, 8/4/11 at 13. Thus, to the extent there was any ambiguity about whether the claim excluded all resonant converters, the PTO resolved it by concluding that there was no such exclusion.

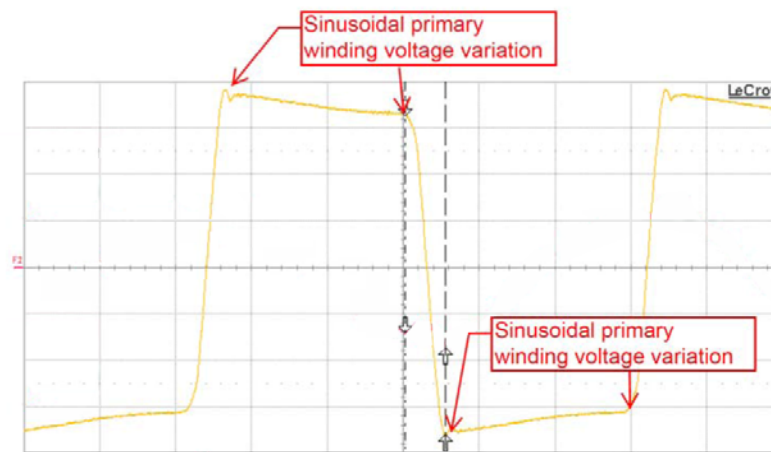
Defendants also cite statements distinguishing the Steigerwald reference as having "sinusoidal waveforms" in the primary winding voltage which "do not have the short transitions required." Dkt. 280 at 7. But in Steigerwald, the transitions in a cycle of the primary winding voltage waveform are a single continuous sinusoidal curve lasting about half the switching cycle, much longer than the 20% required for the transition times to be "short." The shape of this waveform is shown in Figure 10f of Steigerwald:



Ex. 13, Steigerwald '539 at 11. And, the statement Defendants quote cited to paragraph 25 of the declaration of Dr. Dickens, which explained that in Steigerwald's sinusoidal primary voltage winding waveform, "the transition time is *nearly the entire pulse width*," much larger than the

20% maximum for a transition time to be "short." Dkt. 280, Ex. 6 at 52; Dkt. 62, Dickens Decl. ¶25 (emphasis added).

The apparent purpose of Defendants' claim construction is not to distinguish sinusoidal primary winding voltage waveforms with long transitions, like those in Steigerwald. Rather, they seek to exclude accused converters that they contend to be "resonant," but actually have primary winding voltage waveforms with short transitions similar to those in the preferred embodiment. For example, in its brief opposing a preliminary injunction, Defendant Vicor provided the following as an example of the type of "resonant" primary winding voltage waveform Defendants now seek to exclude from the scope of the claims:



Dkt. 56 at 8 (extraneous information removed). SynQor, however, did not "clearly and unmistakably" surrender coverage of such waveforms (where the transitions are short but there is purportedly some minor sinusoidal variation or "resonance" superimposed upon what is essentially a square-wave), as they were never at issue during the reexaminations.

III. "Substantially Uninterrupted" Flow of Power

"Substantially uninterrupted flow of power through the primary and secondary winding circuits"	
SynQor's Proposed Construction	Defendants' New Proposed Construction
"Throughout at least the portions of the switching cycle other than the brief transition times, power flows through the primary and secondary winding circuits."	"Power flow from the primary winding circuit to the secondary winding circuit that is essentially constant essentially all of the time Throughout the switching cycle, power flows through the

	<u>primary and secondary winding circuits without substantial interruption."</u>
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In their response brief, Defendants abandon their previous construction requiring that power flow be "essentially constant essentially all the time." Instead, Defendants propose a new construction that simply rearranges the words in the claim, proposing that "substantially uninterrupted flow of power" be construed to mean "power flows ... without substantial interruption." Dkt. 280 at 12.⁴ This construction would not be helpful to a jury in understanding the meaning of the claim terms, and ignores the definition provided in the specification.

The specification explains that, in the isolation stage, "substantially uninterrupted" power flow occurs when "power is always flowing from input to output (except during the brief switch transitions)." '021 Patent, Col. 4:8-14. In other words, power can be interrupted (not flowing) during the brief switch transitions and still be "substantially uninterrupted." Defendants' "construction," however, does not make clear that power can be interrupted during the switch transitions. Thus, SynQor is concerned that Defendants may use their construction to argue, contrary to the specification, that the claims do not cover an isolation stage that is only interrupted during the brief switch transitions. For example, they may argue that an interruption is "substantial" if it merely involves a substantial reduction in power flow for an instant in time much shorter than a switch transition. To prevent such an outcome, the Court should make clear that power can be interrupted (not flow) during the brief switch transitions, as the specification explains.

Defendants argue that SynQor's construction "fails to provide any guidance as to what is considered 'brief transition times.'" Dkt. 280 at 12. However, the parties agree that "short" (*i.e.* brief) transition times are those which make up less than 20% of the switching cycle.

Defendants do not suggest that there is a difference between a "brief" transition and a "short"

⁴ Defendants do not even rearrange the words in a logically consistent manner. Defendants argue that "uninterrupted" means "without interruption." Dkt. 280 at 12. But then "substantially uninterrupted" would mean "substantially without interruption," not "without substantial interruption" as Defendants contend.

one. SynQor's proposed construction thus provides far more useful guidance to a jury than Defendants' does, and ensures that the term is construed consistently with the specification.

IV. Power Flow "First Before" Any Regulation Stage

"A non-regulating isolating step-down converter through which power from the DC input flows first before flowing through any regulation stage"	
SynQor's Proposed Construction	Defendants' Proposed Construction
"Step-down converter" has the same meaning as "down converter." "Down converter" means "a switching regulator where power flows toward the lower voltage." <i>See</i> constructions for "non-regulating," "isolating," and "regulation." SynQor is of the view that no further construction of this phrase is required.	"A non-regulating isolating step-down converter through which power from the DC input flows first before flowing through any regulation stage" means "a non-regulating, isolating step down converter that is powered from an unregulated DC input voltage"

Defendants argue that the "plain language" of the claim is "too ambiguous for a jury to apply" because it provides "no guidance as to how to identify the relevant path from which a regulation stage must be absent." Dkt. 280 at 24. That is not true. The claims cover a "DC-DC power converter system" having a "non-regulating isolation step-down converter through which power from the DC input flows before flowing through any regulation stage." This means that, within the "DC-DC power converter system," power from the DC input does not flow through any regulation stage before it flows through the "non-regulating isolation step-down converter." There is no ambiguity.

Defendants' proposed construction changes the ordinary meaning of the claim because it takes a temporal term ("flows first before") and redefines it to require that a particular *type* of signal be "powering" the converter. Moreover, the first element of the claims at issue already describes the "DC input," and there is no reason to add a different and more restrictive "DC input" limitation to the separate "non-regulating isolating" converter claim element. *See, e.g.*, '702 patent, claim 1.

V. Control Circuit Which Controls Duty Cycle

"Control circuit which controls duty cycle of the primary winding circuit"	
SynQor's Proposed Construction	Defendants' Proposed Construction
"Primary winding circuit" has the same meaning	"Control circuit which controls duty cycle of

as "primary transformer winding circuit." "Primary transformer winding circuit" means "a circuit that includes a primary winding of a transformer." SynQor is of the view that no further construction of this phrase is required.	the primary winding circuit" means "a control circuit that maintains the duty cycle of the primary winding circuit."
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Defendants argue that "control" should be redefined (contrary to its ordinary meaning) to mean "maintain" because the specification describes a "pulse width modulator (PWM) control chip" that maintains the duty cycle during normal operation. Dkt. 280 at 27. But the specification nowhere defines "control" to mean "maintain." Nor does it require reading this specific implementation from the preferred embodiment into the claims. Defendants also point to dependent claim 47, requiring that the duty cycle be reduced in other than normal operation. *Id.* However, this limitation is different from and narrower than the limitation in the independent claim (which merely requires "controlling" the duty cycle), and thus the doctrine of claim differentiation does not apply. *See Ecolab Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1375 (Fed. Cir. 2002) (applying claim differentiation "[b]ecause the only meaningful difference between" independent claim and dependent claim was disputed limitation).

VI. Means for Controlling Duty Cycle

Although Defendants argue that there is no disclosure in the specification corresponding to the claimed function, they admit that the specification "references a class of control chips" that "facilitate a fixed duty cycle," specifically a U100 pulse width modulator control chip. Dkt. 280 at 29-30. The Court in the '497 case found that "the disclosed 'control circuit' is clearly linked to and associated with the claimed function" in the specification. '497 case, Dkt. 474 at 40. Defendants provide no basis to reach a different conclusion here, much less the clear and convincing evidence that would be required to prove the claim invalid for indefiniteness.

CONCLUSION

SynQor requests its constructions be adopted by the Court.

Dated: November 26, 2013

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CERTIFICATE OF SERVICE

I hereby certify that all counsel of record who have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3) on November 26, 2013.

/s/ David T. DeZern

David T. DeZern